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USPT,JPAB,EPAB,DWPI	(\$absorbent polymers) same gel\$ same (transition metal)	2	<u>L9</u>
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USPT,JPAB,EPAB,DWPI	16 and gel\$ and polymer\$ and (transition metal or cobalt)	141	<u>L7</u>
USPT,JPAB,EPAB,DWPI	(aminobutyric acid) or (aminocaproic acid)	4751	<u>L6</u>
USPT,JPAB,EPAB,DWPI	(acryl\$ aminobutyric acid) or (acryl\$ aminocaproic acid)	0	<u>L5</u>
USPT,JPAB,EPAB,DWPI	(acryloyl aminobutyric acid) or (acryloyl aminocaproic acid)	0	<u>L4</u>
USPT,JPAB,EPAB,DWPI	acrylamido methylpropane sulfonic acid	40	<u>L3</u>
USPT,JPAB,EPAB,DWPI	(gel\$ same polymer\$ same solvent )and (AMPS and transition metal)	57	<u>L2</u>
USPT,JPAB,EPAB,DWPI	(gel\$ same alcohol)and (AMPS same transition metal)	0	<u>L1</u>

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DRY-FORMEDABSORBENT.DWPI,EPAB,JPAB,USPT.	1
FLUIDABSORBENT.DWPI,EPAB,JPAB,USPT.	1
LIQUIDABSORBENT.DWPI,EPAB,JPAB,USPT.	7
SOUNDABSORBENT.DWPI,EPAB,JPAB,USPT.	4
DEABSORBENT.DWPI,EPAB,JPAB,USPT.	1
.....	
GELS(GELATIN/M2).USPT,JPAB,EPAB,DWPI.	pickup term
(((\$ABSORBENT POLYMERS) SAME GELS SAME (TRANSITION METAL) ).USPT,JPAB,EPAB,DWPI.	2

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(\$absorbent polymers) same gel\$ same  
(transition metal)

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L3: Entry 26 of 40

File: USPT

Sep 10, 1985

DOCUMENT-IDENTIFIER: US 4540510 A

TITLE: Synergistic thickener mixtures of amps polymers with other thickeners

## BSPR:

The mixtures of polymers of acrylamido-methylpropane sulfonic acid with the other thickeners such as the galactomannan gums or derivatives thereof, polyethylene oxide polymers and the cellulose alkyl ethers find utility in the areas where the polymers are used individually. Thus, the mixture with hydroxypropyl guar will find particular utility in earth formation fracturing for oil well stimulation because of this particular rheology. Examples of other applications include thickening textile print pastes and suspending pigments in paints as well as gelling alcohol-based cosmetic formulations.

## BSPR:

The acrylamido-methylpropane sulfonic acid polymers employed in the present invention are prepared from an acrylamido-methylpropane sulfonic acid, such as, 2-acrylamido-2-methylpropane sulfonic acid, which is commercially available and sold under the trademark "AMPS" by the Lubrizol Corporation.

## BSPR:

As indicated earlier, the other thickener polymers used in admixture with the acrylamido-methylpropane sulfonic acid polymers to provide a synergistic effect are the galactomannan gums, polyalkylene oxide polymers and cellulose alkyl ethers. The galactomannan gums includes the class of polysaccharides containing both galactose and mannose units. The polygalactomannans are usually found in the endosperm section of leguminous seeds such as guar, locust bean, honey locust and flametree. Derivatives of these gums such as the hydroxy alkyl ethers are particularly useful in admixture with the acrylamidomethylpropane sulfonic acid polymers.

## BSPR:

As indicated earlier, other polymers which are employed in admixture with the acrylamido-methylpropane sulfonic acid polymers are the water soluble cellulose ethers and the polyalkylene oxide polymers. These polymers are well known and can be produced in accordance with known procedures. The cellulose ethers which may be used among others are the hydroxyl containing cellulose ethers such as hydroxyalkyl cellulose corresponding to the hydroxy alkyl ethers of galactomannans above such as hydroxyethyl and hydroxypropyl cellulose and the alkylhydroxyalkyl celluloses such as methylhydroxypropyl cellulose. The most common polyalkylene oxide polymers which are available commercially are the poly(ethylene oxide) polyether polymers.

## DEPR:

The other polymer employed in admixture with the acrylamido-methylpropane sulfonic acid polymer, designated (B) polymer in the Tables are identified in accord with the following code:

**WEST**

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L3: Entry 24 of 40

File: USPT

Nov 25, 1986

DOCUMENT-IDENTIFIER: US 4624795 A

TITLE: Aqueous acid gels and use thereof

## DEPR:

In a 1 liter reaction vessel there was added 288 grams of distilled water, 132 grams of acrylamido methylpropane sulfonic acid, and 4.8 grams of vinyl phosphonic acid. The pH was adjusted with 277 grams of 10 weight percent sodium hydroxide to 8.5. Then 96 grams of acrylamide and 7.2 grams of vinylformamide were added to the vessel. The solution was degassed with N.sub.2 for 30-45 minutes. The reaction was then initiated with 2 ml of aqueous 1 weight percent ammonium peroxydisulfate. After a short induction period the reaction began. As the reaction proceeded the temperature increased to 65.degree. C. The reaction was left undisturbed for 12 hours, yielding 30% by weight active copolymer. The water was evacuated from the gel yielding a dry, crystalline polymer that was easily ground into a fine white powder.

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L3: Entry 38 of 40

File: DWPI

Aug 21, 1985

DERWENT-ACC-NO: 1985-204696

DERWENT-WEEK: 198534

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TITLE: Thickening of water or alcohol - using mixt. of poly-acrylamido-methane sulphonic acid and specified gums or other water-sol. polymers, showing synergism

INVENTOR: KARL, C L

PATENT-ASSIGNEE: HENKEL CORP (HENK)

PRIORITY-DATA: 1984US-0579242 (February 13, 1984)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 152095 A	August 21, 1985	E	025	N/A
CA 1261516 A	September 26, 1989	N/A	000	N/A
DE 3564441 G	September 22, 1988	N/A	000	N/A
EP 152095 B	August 17, 1988	E	000	N/A
JP 60192753 A	October 1, 1985	N/A	000	N/A
US 4540510 A	September 10, 1985	N/A	000	N/A

DESIGNATED-STATES: AT BE CH DE FR GB IT LI NL AT BE CH DE FR GB IT LI NL

CITED-DOCUMENTS:FR 2130542

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 152095A	February 12, 1985	1985EP-0101485	N/A
JP60192753A	February 13, 1985	1985JP-0027512	N/A
US 4540510A	February 13, 1984	1984US-0579242	N/A

INT-CL (IPC): C08B 37/00; C08F 128/02; C08L 1/28; C08L 5/14; C08L 33/26; C08L 71/02; C09K 7/00; G05D 24/00

ABSTRACTED-PUB-NO: EP 152095A

## BASIC-ABSTRACT:

Compsn. comprises: (i) a polymer of an acrylamido methylpropane sulphonic acid; and (ii) a water-sol. polymer selected from galactomannan gums, hydroxyalkyl ethers thereof, hydroxyalkyl cellulose ethers, polyalkylene oxides and their mixts., the alkyl and alkylene gps. contg. 2-8C atoms.

USE/ADVANTAGE - The compsns. are useful in the same fields as their individual components are, e.g. formation fracturing for oil well stimulation (where (ii) is hydroxypropyl guar), thickening textile print pastes, suspending pigments in paints, and gelling alcohol-based cosmetic formulations. The components of the compsn. have a synergistic thickening effect in water and alcohol solvents: e.g. the actual viscosity is 1-30 times that predicted from the viscosities of separate solns. of (i) and (ii).

ABSTRACTED-PUB-NO: EP 152095B

## EQUIVALENT-ABSTRACTS:

A composition comprising a mixture of a polymer of an acrylamido methylpropanesulfonic acid and a water soluble polymer selected from galactomannan gums, hydroxyalkyl ethers of galactomannan gums, hydroxyalkyl cellulose ethers, polyalkylene oxide polymers and mixtures thereof, wherein the alkyl and alkylene groups contain from 2 to 8 carbon atoms. (16pp)

US 4540510A

Compsn. comprises a mixt. of (A) acrylamido methylpropane sulphonie acid polymer of mol. wt. above 1000000 and (B) water soluble polymer. (B) is galactomannan gum, hydroxyalkyl ether of galactomannan gum, hydroxyalkyl cellulose ether or polyalkylene oxide polymer. The alkyl and alkylene gps. have 2-8C.

USE/ADVANTAGE - The polymers exhibit a synergistic thickening effect. The compsn. can be used for earth formation fracturing for oil well stimulation and in textile print pastes, paints, cosmetic formulations, etc. (7pp)

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: A97 D21 H01

CPI-CODES: A03-A04A; A03-C02; A04-A; A04-D04; A05-H01; A07-A01; A07-A04F; D08-B; D10-A01; H01-C03;

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## Collections

### Definition, Editing, Browsing

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Name: Undefined

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6124391  
5856370  
5413731  
4952327  
4845138  
4624795  
4540510

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L3: Entry 37 of 40

File: DWPI

Sep 19, 1990

DERWENT-ACC-NO: 1990-284304

DERWENT-WEEK: 199038

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TITLE: Treatment of red mud filter cake waste from Bayer process - by addn. of water-swellable, water-insol. polymers to improve rigidification after pumping

**ABTX:**

The dispersed particles to be pumped are pref. of very small size e.g. all less than 100 microns, pref. with at least 90% below 20 microns, esp. a filter cake of red mud from the Bayer process of recovering alumina from bauxite. In particular the process is effected on muds with solids content 30-80 (esp. 55-65) wt.%. The polymer is pref. made from a water-sol. monomer (or blend) with a di- or poly-ethylenically unsatd. crosslinker, esp. anionic polymers of (meth)acrylic acid, allyl sulphonic acid or 2-acrylamido-methylpropane sulphonic acid.



FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
613255	January 1961	CAX	400/6
727178	February 1966	CAX	117/45
873290	June 1971	CAX	
2180590	January 1997	CAX	
0 705 643A1	April 1996	EPX	
0 755 964A2	January 1997	EPX	
1200535	September 1965	DEX	
56 95936	December 1979	JPX	
94/22940	October 1994	WOX	
97/19582	June 1997	WOX	

## OTHER PUBLICATIONS

Buchholz, "Keeping Dry with Superabsorbent Polymers", Chemtech, (Sep. 1994) pp. 38-43.

"The Merck Index, an Encyclopedia of Chemicals, Drugs, and Biologicals", edited by Budavari et al. (1989).

"NeoGen.TM.2000--Basic Formulating Tips" (Sep. 1996).

"NeoGen.TM.DGH" (Sep. 1996).

ART-UNIT: 174

PRIMARY-EXAMINER: Sanders; Kriellion

ATTY-AGENT-FIRM: Jenkins & Wilson, P.A.

## ABSTRACT:

A particulate material composition of superabsorbent polymer particles, wherein less than about 60% by weight of the superabsorbent polymer particles will pass through a U.S. Standard 50 mesh sieve. The composition has anti-caking properties and also reduced dusting. The composition can be produced by mixing the superabsorbent polymer particles with an inorganic powder, such as clay.

67 Claims, 0 Drawing figures

*Handwritten:*  
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**WEST**

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L3: Entry 2 of 40

File: USPT

Sep 26, 2000

US-PAT-NO: 6124391

DOCUMENT-IDENTIFIER: US 6124391 A

TITLE: Superabsorbent polymers having anti-caking characteristics

DATE-ISSUED: September 26, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sun; Fang	Lisle	IL	N/A	N/A
Jones; Heather S.	Greensboro	NC	N/A	N/A
Kaiser; Thomas A.	Greensboro	NC	N/A	N/A
Hsu; Whei-Neen	Greensboro	NC	N/A	N/A
Molen; Ronald L.	Greensboro	NC	N/A	N/A
Deaton; Peter A.	Greensboro	NC	N/A	N/A
Messner; Bernfried A.	Greensboro	NC	N/A	N/A

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Stockhausen GmbH & Co. KG	N/A	N/A	N/A	DEX	03

APPL-NO: 9/ 135844

DATE FILED: August 18, 1998

INT-CL: [7] C08K 3/34

US-CL-ISSUED: 524/447; 523/223

US-CL-CURRENT: 524/447; 523/223

FIELD-OF-SEARCH: 524/447, 523/223

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

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	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	3012900	December 1961	Kleinmann et al.	117/4
<input type="checkbox"/>	3723153	March 1973	Nagata et al.	117/21
<input type="checkbox"/>	4107382	August 1978	Augustine et al.	428/368
<input type="checkbox"/>	4286082	August 1981	Tsubakimoto et al.	526/240
<input type="checkbox"/>	4359492	November 1982	Schlademan	427/222
<input type="checkbox"/>	4381782	May 1983	Mazurak et al.	604/368
<input type="checkbox"/>	4448900	May 1984	Schwarz	521/57
<input type="checkbox"/>	4533562	August 1985	Ikegami et al.	427/3
<input type="checkbox"/>	4576835	March 1986	Gardenier et al.	427/222
<input type="checkbox"/>	4610678	September 1986	Weisman et al.	604/368
<input type="checkbox"/>	4734478	March 1988	Tsubakimoto et al.	527/300
<input type="checkbox"/>	4774138	September 1988	Gardenier et al.	428/407
<input type="checkbox"/>	4833179	May 1989	Young et al.	522/183
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<input type="checkbox"/>	4898616	February 1990	Hyché et al.	106/271
<input type="checkbox"/>	4952650	August 1990	Young et al.	526/194
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<input type="checkbox"/>	5096493	March 1992	Hyché et al.	106/271
<input type="checkbox"/>	5190579	March 1993	Gose et al.	106/18
<input type="checkbox"/>	5200270	April 1993	Ishida et al.	428/403
<input type="checkbox"/>	5236649	August 1993	Hall et al.	264/130
<input type="checkbox"/>	5322731	June 1994	Callahan, Jr. et al.	428/327
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<input type="checkbox"/>	5413747	May 1995	Akers et al.	N/A
<input type="checkbox"/>	5419956	May 1995	Roe	428/283
<input type="checkbox"/>	5443910	August 1995	Gose et al.	428/407
<input type="checkbox"/>	5455288	October 1995	Needham	523/205
<input type="checkbox"/>	5466731	November 1995	Akers et al.	N/A
<input type="checkbox"/>	5536576	July 1996	Hishida	428/403
<input type="checkbox"/>	5688449	November 1997	Fox	264/54
<input type="checkbox"/>	5728742	March 1998	Staples et al.	521/57

FOREIGN PATENT DOCUMENTS